

allowing the customer online access to CPNI related to a telecommunications service account. Once authenticated, the customer may only obtain online access to CPNI related to a telecommunications service account through a password, as described in paragraph (e) of this section, that is not prompted by the carrier asking for readily available biographical information, or account information.

- (d) *In-store access to CPNI.* A telecommunications carrier may disclose CPNI to a customer who, at a carrier's retail location, first presents to the telecommunications carrier or its agent a valid photo ID matching the customer's account information.
- (e) *Establishment of a Password and Back-up Authentication Methods for Lost or Forgotten Passwords.* To establish a password, a telecommunications carrier must authenticate the customer without the use of readily available biographical information, or account information. Telecommunications carriers may create a back-up customer authentication method in the event of a lost or forgotten password, but such back-up customer authentication method may not prompt the customer for readily available biographical information, or account information. If a customer cannot provide the correct password or the correct response for the back-up customer authentication method, the customer must establish a new password as described in this paragraph.
- (f) *Notification of account changes.* Telecommunications carriers must notify customers immediately whenever a password, customer response to a back-up means of authentication for lost or forgotten passwords, online account, or address of record is created or changed. This notification is not required when the customer initiates service, including the selection of a password at service initiation. This notification may be through a carrier-originated voicemail or text message to the telephone number of record, or by mail to the address of record, and must not reveal the changed information or be sent to the new account information.
- (g) *Business Customer Exemption.* Telecommunications carriers may bind themselves contractually to authentication regimes other than those described in this section for services they provide to their business customers that have both a dedicated account representative and a contract that specifically addresses the carriers' protection of CPNI.

7. Section 64.2011 is added to read as follows:

§ 64.2011 Notification of customer **proprietary** network information security breaches

- (a) A telecommunications carrier shall notify law enforcement of a breach of its customers' CPNI as provided in this section. The carrier shall not notify its customers or disclose the breach publicly, whether voluntarily or under state or local law or these rules, until it has completed the process of notifying law enforcement pursuant to paragraph (b).
- (b) As soon as practicable, and in no event later than seven (7) business days, after reasonable determination of the breach, the telecommunications carrier shall electronically notify the United States Secret Service (USSS) and the Federal Bureau of Investigation (FBI) through a central reponing facility. The Commission will maintain a link to the reporting facility at <http://www.fcc.gov/eb/cpni>.
 - (1) Notwithstanding any state law to the contrary, the carrier shall not notify customers or disclose the breach to the public until 7 full business days have passed after notification to the USSS and the FBI except as provided in paragraphs (2) and (3).

(2) If the carrier believes that there is an extraordinarily urgent need to notify any class of affected customers sooner than otherwise allowed under paragraph (1), in order to avoid immediate and irreparable harm, it shall so indicate in its notification and may proceed to immediately notify its affected customers only after consultation with the relevant investigating agency. The carrier shall cooperate with the relevant investigating agency's request to minimize any adverse effects of such customer notification.

(3) If the relevant investigating agency determines that public disclosure or notice to customers would impede or compromise an ongoing or potential criminal investigation or national security, such agency may direct the carrier not to so disclose or notify for an initial period of up to 30 days. Such period may be extended by the agency as reasonably necessary in the judgment of the agency. If such direction is given, the agency shall notify the carrier when it appears that public disclosure or notice to affected customers will no longer impede or compromise a criminal investigation or national security. The agency shall provide in writing its initial direction to the carrier, any subsequent extension, and any notification that notice will no longer impede or compromise a criminal investigation or national security and such writings shall be contemporaneously logged on the same reporting facility that contains records of notifications filed by carriers.

(c) *Recordkeeping.* All carriers shall maintain a record, electronically or in some other manner, of any breaches discovered, notifications made to the USSS and the FBI pursuant to paragraph (b), and notifications made to customers. The record must include, if available, dates of discovery and notification, a detailed description of the CPNI that was the subject of the breach, and the circumstances of the breach. Carriers shall retain the record for a minimum of 2 years.

(d) *Definitions.* As used in this section, a "breach" has occurred when a person, without authorization or exceeding authorization, has intentionally gained access to, used, or disclosed CPNI.

(e) This section does not supersede any statute, regulation, order, or interpretation in any State, except to the extent that such statute, regulation, order, or interpretation is inconsistent with the provisions of this section, and then only to the extent of the inconsistency.

Appendix C

Final Regulatory Flexibility Analysis

86. As required by the Regulatory Flexibility Act of 1980, as amended (RFA),²¹⁴ an Initial Regulatory Flexibility Analysis (IRFA) was incorporated in the *EPIC CPNI Notice* in CC Docket No. 96-115 and the *IP-Enabled Services Notice* in WC Docket 04-36.²¹⁵ The Commission sought written public comment on the pi-oposals in both notices, including comment on the IRFA.²¹⁶ We received comments specifically directed toward the IRFA from three commenters in CC Docket No. 96-115 and from three commenters in WC Docket No. 04-36. These comments are discussed below. This Final Regulatory Flexibility Analysis (FRFA) conforms to the RFA.²¹⁷

A. Need for, and Objectives of, the Rules

87. Today's Order strengthens the Commission's rules to protect the privacy of CPNI that is collected and held by providers of communications services. Section 222 of the Communications Act requires telecommunications carriers to take specific steps to ensure that CPNI is adequately protected from unauthorized disclosure. This Order adopts additional safeguards to protect customers' CPNI against unauthorized access and disclosure.

B. Summary of Significant Issues Raised by Public Comments in Response to the IRFA

88. *Comments Received in Response to the EPIC CPNI Notice.* In this section, we respond to comments filed in response to the IRFA.²¹⁸ To the extent we received comments raising general small business concerns during this proceeding, those comments are discussed throughout the Order.

89. We disagree with Alexicon that small carriers are less vulnerable to unauthorized attempts to access CPNI.²¹⁹ In fact, Alexicon itself points out that one of its client companies actually experienced an unauthorized access attempt, and thus we find the steps the Commission takes in this Order are applicable to all carriers.²²⁰ We do, however, agree with commenters that argue the Commission should not adopt many of EPIC's suggested requirements.²²¹ We also agree with commenters that argue for flexible rules to allow carriers to determine proper authentication methods for its customers.²²² Therefore, we do not adopt specific authentication methods, or back-up authentication methods for lost or forgotten passwords and instead adopt rules that provide limits on the types of authentication methods that meet section 222's

²¹⁴ See 5 U.S.C. § 603. The RFA, see 5 U.S.C. §§ 601-12, has been amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Pub. L. No. 104-121, Title II, 110 Stat. 857 (1996).

²¹⁵ See *EPIC CPNI Notice*, 21 FCC Rcd at 1794, para. 31 & Appendix B; *IP-Enabled Services Notice*, 19 FCC Rcd at 4917, para. 91 & Appendix A.

²¹⁶ See *EPIC CPNI Notice*, 21 FCC Rcd at 1794, para. 31 & Appendix B; *IP-Enabled Services Notice*, 19 FCC Rcd at 4917, para. 91 & Appendix A.

²¹⁷ See 5 U.S.C. § 604.

²¹⁸ See Alexicon Comments at 1-9; NTCA Comments at 1-5; OPASTCO Comments at 1-9.

²¹⁹ See Alexicon Comments at 7.

²²⁰ See Alexicon Comments at 2, n.6.

²²¹ See, e.g., NTCA Comments at 3-4; OPASTCO Comments at 2-7.

²²² See, e.g., NTCA Comments at 4.

mandate to protect CPNI.²²³ Further, we agree with commenters that small carriers should be provided additional time to implement the requirements that we do adopt in this Order.” Thus, we provide small carriers with an additional **six** month implementation period for the line carrier authentication requirements adopted in this Order.”

90. Comments Received in Response to the IP-Enabled Services Notice. In this section, we respond to comments filed in response to the IRFA.²²⁶ To the extent we received comments raising general small business concerns during this proceeding, those comments are discussed throughout the Order.

91. We disagree with the SBA and Menard that the Commission should postpone acting in this proceeding – thereby postponing extending the application of the CPNI rules to interconnected VoIP service providers – and instead should reevaluate the economic impact and the compliance burdens on small entities and issue a further notice of proposed rulemaking in conjunction with a supplemental IRFA identifying and analyzing the economic impacts on small entities and **less** burdensome alternatives.²²⁷ We believe the additional steps suggested by SBA and Menard are unnecessary because small entities already have received sufficient notice of the issues addressed in today’s Order²²⁸; and because the Commission has considered the economic impact on small entities and what ways are feasible to minimize the burdens imposed on those entities, and, to the extent feasible, has implemented those less burdensome alternatives.”

C. Description and Estimate of the Number of Small Entities to Which Rules Will Apply

92. The RFA directs agencies to provide a description of and, where feasible, an estimate of the number of small entities that may be affected by the rules adopted herein.²³⁰ The RFA generally defines the term “small entity” as having the same meaning as the terms “small business,” “small organization,” and “small governmental jurisdiction.”²³¹ In addition, the term “small business” has the same meaning as the term “small business concern” under the Small Business Act.²³² A small business concern is one

²²³ See Order at paras. 13-22.

²²⁴ See, e.g., Alexicon Comments at 8; NTCA Comments at 3.

²²⁵ See Order at para. 61.

²²⁶ See SBA Comments; Menard Comments; Menard Reply.

²²⁷ See SBA Comments at 2, 4, 6; Menard Comments; Menard Reply at 4.

²²⁸ The *IP-Enabled Services Notice* specifically sought comment on whether the CPNI requirements should apply to any provider of interconnected VoIP service, and the Commission published a summary of that notice in the Federal Register. See *IP-Enabled Services Notice*, 19 FCC Rcd at 4910, para. 71; *Regulatory Requirements for IP-Enabled Services*, WC Docket No. 04-36, Notice of Proposed Rulemaking, 69 Fed. Rep. 16193-01 (Mar. 29, 2004). We note that a number of small entities submitted comments in this proceeding. See *supra* Appendix A.

²²⁹ See Order at para. 61.

²³⁰ 5 U.S.C. §§ 603(b)(3), 604(a)(3).

²³¹ 5 U.S.C. § 601(6).

²³² 5 U.S.C. § 601(3) (incorporating by reference the definition of “small business concern” in the Small Business Act, 15 U.S.C. 4 632). Pursuant to 5 U.S.C. § 601(3), the statutory definition of a small business applies “unless an agency, after consultation with the Office of Advocacy of the Small Business Administration and after opportunity for public comment, establishes one or more definitions of such terms which are appropriate to the activities of the agency and publishes such definitions in the Federal Register.”

which; (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the Small Business Administration (SBA).²³³

93. *Small Businesses.* Nationwide, there ~~are~~ a total of approximately 22.4 million small businesses, according to SBA data.²³⁴

94. *Small Organizations.* Nationwide, there are approximately 1.6 million small organizations.²³⁵

95. *Small Governmental Jurisdictions.* The term "small governmental jurisdiction" is defined generally as "governments of cities, towns, townships, villages, school districts, or special districts, with a population of less than fifty thousand."²³⁶ Census Bureau data for 2002 indicate that there were 87,525 local governmental jurisdictions in the United States.²³⁷ We estimate that, of this total, 84,377 entities were "small governmental jurisdictions."²³⁸ Thus, we estimate that most governmental jurisdictions are small.

1. Telecommunications Service Entities

a. Wireline Carriers and Service Providers

96. We have included small incumbent local exchange carriers in this present RFA analysis. As noted above, a "small business" under the RFA is one that, *inter alia*, meets the pertinent small business size standard (*e.g.*, a telephone communications business having 1,500 or fewer employees), and "is not dominant in its field of operation."²³⁹ The SBA's Office of Advocacy contends that, for RFA purposes, small incumbent local exchange carriers are not dominant in their field of operation because any such dominance is not "national" in scope.²⁴⁰ We have therefore included small incumbent local exchange carriers in this RFA analysis, although we emphasize that this RFA action has no effect on Commission analyses and determinations in other, non-RFA contexts.

97. *Incumbent Local Exchange Carriers (LECs).* Neither the Commission nor the SBA has developed a small business size standard specifically for incumbent local exchange services. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees.²⁴¹ According to

²³³ 15 U.S.C. § 632.

²³⁴ See SBA, Programs and Services, SBA Pamphlet No. CO-0028, at page 40 (July 2002).

²³⁵ Independent Sector, The New Nonprofit Almanac & Desk Reference (2002).

²³⁶ 5 U.S.C. § 601 (5).

²³⁷ U.S. Census Bureau, Statistical Abstract of the United States: 2006, Section 8, page 272, Table 415

²³⁸ We assume that the villages, school districts, and special districts are small, and total 48,558. See U.S. Census Bureau, Statistical Abstract of the United States: 2006, section 8, page 273, Table 417. For 2002, Census Bureau data indicate that the total number of county, municipal, and township governments nationwide was 38,967, of which 35,819 were small. *Id.*

²³⁹ 15 U.S.C. § 632

²⁴⁰ Letter from Jere W. Glover, Chief Counsel for Advocacy, SBA, to William E. Kennard, Chairman, FCC (May 27, 1999). The Small Business Act contains a definition of "small-business concern," which the RFA incorporates into its own definition of "small business." See 15 U.S.C. § 632(a) (Small Business Act); 5 U.S.C. § 601(3) (RFA). SBA regulations interpret "small business concern" to include the concept of dominance on a national basis. See 13 C.F.R. § 121.102(b).

²⁴¹ 13 C.F.R. § 121.201, NAICS code 517110 (changed from 513310 in Oct. 2002)

Commission data."²⁴² 1,303 carriers have reported that they are engaged in the provision of incumbent local exchange services. Of these 1,303 carriers, an estimated 1,020 have 1,500 or fewer employees and 283 have more than 1,500 employees. Consequently, the Commission estimates that most providers of incumbent local exchange service are small businesses that may be affected by our action.

98. **Competitive Local Exchange Carriers, Competitive Access Providers (CAPs), "Shared-Tenant Service Providers," and "Other Local Service Providers."** Neither the Commission nor the SBA has developed a small business size standard specifically for these service providers. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees.²⁴³ According to Commission data,²⁴⁴ 769 carriers have reported that they are engaged in the provision of either competitive access provider services or competitive local exchange carrier services. Of these 769 carriers, an estimated 676 have 1,500 or fewer employees and 93 have more than 1,500 employees. In addition, 12 carriers have reported that they are "Shared-Tenant Service Providers," and all 12 are estimated to have 1,500 or fewer employees. In addition, 39 carriers have reported that they are "Other Local Service Providers." Of the 39, an estimated 38 have 1,500 or fewer employees and one has more than 1,500 employees. Consequently, the Commission estimates that most providers of competitive local exchange service, competitive access providers, "Shared-Tenant Service Providers," and "Other Local Service Providers" are small entities that may be affected by our action.

99. **Local Resellers.** The SBA has developed a small business size standard for the category of Telecommunications Resellers. Under that size standard, such a business is small if it has 1,500 or fewer employees.²⁴⁵ According to Commission data,²⁴⁶ 143 carriers have reported that they are engaged in the provision of local resale services. Of these, an estimated 141 have 1,500 or fewer employees and two have more than 1,500 employees. Consequently, the Commission estimates that the majority of local resellers are small entities that may be affected by our action.

100. **Toll Resellers.** The SBA has developed a small business size standard for the category of Telecommunications Resellers. Under that size standard, such a business is small if it has 1,500 or fewer employees.²⁴⁷ According to Commission data,²⁴⁸ 770 carriers have reported that they are engaged in the provision of toll resale services. Of these, an estimated 747 have 1,500 or fewer employees and 23 have more than 1,500 employees. Consequently, the Commission estimates that the majority of toll resellers are small entities that may be affected by our action.

101. **Payphone Service Providers (PSPs).** Neither the Commission nor the SBA has developed a small business size standard specifically for payphone services providers. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees.²⁴⁹ According to Commission

²⁴² FCC, Wireline Competition Bureau, Industry Analysis and Technology Division, "Trends in Telephone Service" at Table 5.3, page 5-5 (April 2005) ("Trends in Telephone Service"). This source uses data that are current as of October 1, 2004.

²⁴³ 13 C.F.R. § 121.201, NAICS code 517110 (changed from 513310 in Oct. 2002).

²⁴⁴ "Trends in Telephone Service" at Table 5.3

²⁴⁵ 13 C.F.R. § 121.201, NAICS code 517310 (changed from 513330 in Oct. 2002).

²⁴⁶ "Trends in Telephone Service" at Table 5.3

²⁴⁷ 13 C.F.R. § 121.201, NAICS code 517310 (changed from 513330 in Oct. 2002).

²⁴⁸ "Trends in Telephone Service" at Table 5.3.

²⁴⁹ 13 C.F.R. § 121.201, NAICS code 517110 (changed from 513310 in Oct. 2002).

data.²⁵⁰ 613 carriers have reported that they are engaged in the provision of payphone services. Of these, an estimated 609 have 1,500 or fewer employees and four have more than 1,500 employees. Consequently, the Commission estimates that the majority of payphone service providers are small entities that may be affected by our action.

102. *Interexchange Carriers (IXCs)*. Neither the Commission nor the SBA has developed a small business size standard specifically for providers of interexchange services. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees.²⁵¹ According to Commission data,²⁵² 316 carriers have reported that they are engaged in the provision of interexchange service. Of these, an estimated 292 have 1,500 or fewer employees and 24 have more than 1,500 employees. Consequently, the Commission estimates that the majority of IXCs are small entities that may be affected by our action.

103. *Operator Service Providers (OSPs)*. Neither the Commission nor the SBA has developed a small business size standard specifically for operator service providers. The appropriate size standard under SBA rules is for the category Wired Telecommunications Carriers. Under that size standard, such a business is small if it has 1,500 or fewer employees.²⁵³ According to Commission data,²⁵⁴ 23 carriers have reported that they are engaged in the provision of operator services. Of these, an estimated 20 have 1,500 or fewer employees and three have more than 1,500 employees. Consequently, the Commission estimates that the majority of OSPs are small entities that may be affected by our action.

104. *Prepaid Calling Card Providers*. Neither the Commission nor the SBA has developed a small business size standard specifically for prepaid calling card providers. The appropriate size standard under SBA rules is for the category Telecommunications Resellers. Under that size standard, such a business is small if it has 1,500 or fewer employees.²⁵⁵ According to Commission data,²⁵⁶ 89 carriers have reported that they are engaged in the provision of prepaid calling cards. Of these, 88 are estimated to have 1,500 or fewer employees and one has more than 1,500 employees. Consequently, the Commission estimates that all or the majority of prepaid calling card providers are small entities that may be affected by our action.

105. *800 and 800-Like Service Subscribers*.²⁵⁷ Neither the Commission nor the SBA has developed a small business size standard specifically for 800 and 800-like service (“toll free”) subscribers. The appropriate size standard under SBA rules is for the category Telecommunications Resellers. Under that size standard, such a business is small if it has 1,500 or fewer employees.²⁵⁸ The most reliable source of information regarding the number of these service subscribers appears to be data the Commission collects on the 800, 888, and 877 numbers in use.²⁵⁹ According to our data, at the end of

²⁵⁰ “Trends in Telephone Service” at Table 5.3.

²⁵¹ 13 C.F.R. § 121.201, NAICS code 517110 (changed from 513310 in Oct. 2002).

²⁵² “Trends in Telephone Service” at Table 5.3.

²⁵³ 13 C.F.R. § 121.201, NAICS code 517110 (changed from 513310 in Oct. 2002)

²⁵⁴ “Trends in Telephone Service” at Table 5.3.

²⁵⁵ 13 C.F.R. § 121.201, NAICS code 517310 (changed from 513330 in Oct. 2002)

²⁵⁶ “Trends in Telephone Service” at Table 5.3.

²⁵⁷ We include all toll-free number subscribers in this category, including those for 888 numbers

²⁵⁸ 13 C.F.R. § 121.201, NAICS code 517310 (changed from 513330 in Oct. 2002)

²⁵⁹ See FCC, Common Carrier Bureau, Industry Analysis Division, *Study on Telephone Trends*, Tables 21.2, 21.3 and 21.4 (Feb. 1999).

January, 1999, the number of 800 numbers assigned was 7,692,955; the number of 888 numbers assigned was 7,706,393; and the number of 877 numbers assigned was 1,946,538. We do not have data specifying the number of **these** subscribers that are not independently owned and operated or have more than 1,500 employees, and thus are unable at this time to estimate with greater precision the number of toll free subscribers that would qualify as small businesses under the **SBA** size standard. Consequently, we estimate that there are 7,692,955 or fewer small entity 800 subscribers; 7,706,393 or fewer small entity 888 subscribers; and 1,946,538 or fewer small entity 877 subscribers.

b. International Service Providers

106. The Commission has not developed a small business size standard specifically for providers of international service. The appropriate size standards under SBA rules are for the **two** broad census categories of "Satellite Telecommunications" and "Other Telecommunications." Under both categories, such a business is small if it has \$12.5 million or less in average annual receipts.²⁶⁰

107. The first category of Satellite Telecommunications "comprises establishments primarily engaged in providing point-to-point telecommunications services to other establishments in the telecommunications and broadcasting industries by forwarding and receiving communications signals via a system of satellites or reselling satellite telecommunications."²⁶¹ For this category, Census Bureau data for 2002 show that there were a total of 371 firms that operated for the entire year.²⁶² Of this total, 307 firms had annual receipts of under \$10 million, and 26 firms had receipts of \$10 million to \$24,999,999.²⁶³ Consequently, we estimate that the majority of Satellite Telecommunications firms are small entities that might be affected by our action.

108. The second category of Other Telecommunications "comprises establishments primarily engaged in (1) providing specialized telecommunications applications, such as satellite tracking, communications telemetry, and radar station operations; or (2) providing satellite terminal stations and associated facilities operationally connected with one or more terrestrial communications systems and capable of transmitting telecommunications to or receiving telecommunications from satellite systems."²⁶⁴ For this category, Census Bureau data for 2002 show that there were a total of 332 firms that operated for the entire year.²⁶⁵ Of this total, 259 firms had annual receipts of under \$10 million and 15 firms had annual receipts of \$10 million to \$24,999,999.²⁶⁶ Consequently, we estimate that the majority of Other Telecommunications firms are small entities that might be affected by our action.

c. Wireless Telecommunications Service Providers

109. Below, for those services subject to auctions, we note that, as a general matter, the number of winning bidders that qualify as **small** businesses at the close of an auction does **not** necessarily

²⁶⁰ 13C.F.R. § 121.201, NAICS codes 517410 and 517910.

²⁶¹ U.S. Census Bureau, "2002 NAICS Definitions: 517410 Satellite Telecommunications" (www.census.gov, visited Feb. 2006).

²⁶² U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 517410 (issued Nov. 2005).

²⁶³ *Id.* An additional 38 firms had annual receipts of \$25 million or more.

²⁶⁴ U.S. Census Bureau, "2002 NAICS Definitions: 517910 Other Telecommunications" (www.census.gov, visited Feb. 2006).

²⁶⁵ U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 517910 (issued Nov. 2005).

²⁶⁶ *Id.* An additional 14 firms had annual receipts of \$25 million or more.

represent the number of small businesses currently in service. Also, the Commission does not generally track subsequent business size **unless**, in the context of assignments or transfers, **unjust** enrichment issues are implicated.

110. *Wireless Service Providers.* The SBA has developed a small business size standard for wireless firms within the two broad economic census categories of "Paging"²⁶⁷ and "Cellular and Other Wireless Telecommunications."²⁶⁸ Under both SBA categories, a wireless business is small if it has 1,500 or fewer employees. For the census category of Paging, Census Bureau data for 2002 show that there were 807 firms in this category that operated for the entire year.²⁶⁹ Of this total, 804 firms had employment of 999 or fewer employees, and three firms had employment of 1,000 employees or more.²⁷⁰ Thus, under this category and associated small business size standard, the majority of firms can be considered **small**. For the census category of Cellular and Other Wireless Telecommunications, Census Bureau data for 2002 show that there were 1,397 firms in this category that operated for the entire year.²⁷¹ Of this **total**, 1,378 firms had employment of 999 or fewer employees, and 19 firms had employment of 1,000 employees or more.²⁷² Thus, under this second category and size standard, the majority of firms can, again, be considered small.

111. *Cellular Licensees.* The SBA has developed a small business size standard for wireless firms within the broad economic census category "Cellular and Other Wireless Telecommunications."²⁷³ Under this SBA category, a wireless business is small if it **has** 1,500 or fewer employees. For the census category of Cellular and Other Wireless Telecommunications, Census Bureau data for 2002 show that there were 1,397 firms in this category that operated for the entire year.²⁷⁴ Of this **total**, 1,378 firms had employment of 999 or fewer employees, and 19 firms had employment of 1,000 employees or more.²⁷⁵ Thus, under this category and size standard, the great majority of firms can be considered small. Also, according to Commission data, 437 carriers reported that they were engaged in the provision of cellular service, Personal Communications Service (PCS), or Specialized Mobile Radio (SMR) Telephony services, which are placed together in the **data**.²⁷⁶ We have estimated that 260 of these are small, under the SBA small business size standard.²⁷⁷

²⁶⁷ 13 C.F.R. § 121.201, NAICS code 513321 (changed to 517211 in October 2002).

²⁶⁸ 13 C.F.R. § 121.201, NAICS code 513322 (changed **10517212** in October 2002).

²⁶⁹ U.S. Census Bureau, 2002 Economic Census, Subject Series: "Information," Table 5, Employment Size of Firms for the United States: **2002**, NAICS code 517211 (issued November **2005**).

²⁷⁰ *Id.* The census data **do** not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees: the largest category provided is firms with "1000 employees or more."

²⁷¹ **U.S.** Census Bureau, 2002 Economic Census, Subject Series: "Information," Table 5, Employment Size of Firms for the United **States**: 2002, NAICS code 517212 (issued November 2005).

²⁷² *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees: the largest category provided is firms with "1000 employees or more."

²⁷³ 13 C.F.R. § 121.201, NAICS code 513322 (changed to 517212 in October 2002)

²⁷⁴ U.S. Census Bureau, 2002 Economic Census, Subject Series: "Information," Table 5, Employment Size of Firms for the United **States**: 2002, NAICS code 517212 (issued November 2005).

²⁷⁵ *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees: the largest category provided is firms with "1000 employees or more."

²⁷⁶ "Trend\ in Telephone Service" at Table 5.3

²⁷⁷ *Id.*

112. *Common Carrier Paging.* The SBA has developed a small business size standard for wireless firms within the broad economic census category, "Cellular and Other Wireless Telecommunications."²⁷⁸ Under this SBA category, a wireless business is small if it has 1,500 or fewer employees. For the census category of Paging, Census Bureau data for 2002 show that there were 807 firms in this category that operated for the entire year.²⁷⁹ Of this total, 804 firms had employment of 999 or fewer employees, and three firms had employment of 1,000 employees or more.²⁸⁰ Thus, under this category and associated small business size standard, the majority of firms can be considered small. In the Paging *Third Report and Order*, we developed a small business size standard for "small businesses" and "very small businesses" for purposes of determining their eligibility for special provisions such as bidding credits and installment payments.²⁸¹ A "small business" is an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$15 million for the preceding three years. Additionally, a "very small business" is an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than \$3 million for the preceding three years.²⁸² The SBA has approved these small business size standards.²⁸³ An auction of Metropolitan Economic Area licenses commenced on February 24, 2000, and closed on March 2, 2000.²⁸⁴ Of the 985 licenses auctioned, 440 were sold. Fifty-seven companies claiming small business status won. Also, according to Commission data, 375 carriers reported that they were engaged in the provision of paging and messaging services.²⁸⁵ Of those, we estimate that 370 are small, under the SBA-approved small business size standard.²⁸⁶

113. *Wireless Communications Services.* This service can be used for fixed, mobile, radiolocation, and digital audio broadcasting satellite uses. The Commission established small business size standards for the wireless communications services (WCS) auction. A "small business" is an entity with average gross revenues of \$40 million for each of the three preceding years, and a "very small business" is an entity with average gross revenues of \$15 million for each of the three preceding years. The SBA has approved these small business size standards.²⁸⁷ The Commission auctioned geographic area licenses in the WCS service. In the auction, there were seven winning bidders that qualified as "very small business" entities, and one that qualified as a "small business" entity.

114. *Wireless Telephony.* Wireless telephony includes cellular, personal communications services (PCS), and specialized mobile radio (SMR) telephony carriers. As noted earlier, the SBA has

²⁷⁸ 13 C.F.R. § 121.201, NAICS code 513322 (changed to 517212 in October 2002)

²⁷⁹ U.S. Census Bureau, 2002 Economic Census, Subject Series: "Information," Table 5, Employment Size of Firms for the United States: 2002, NAICS code 517211 (issued November 2005).

²⁸⁰ *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is firms with "1000 employees or more."

²⁸¹ *Amendment of Part 90 of the Commission's Rules to Provide for the Use of the 220-222 MHz Band by the Private Land Mobile Radio Service*, PR Docket No. 89-552, Third Report and Order and Fifth Notice of Proposed Rulemaking, 12 FCC Rcd 10943, 11068-70, paras. 291-295, 62 FR 16004 (Apr. 3, 1997).

²⁸² See Letter to Amy Zoslov, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, FCC, from A. Alvarez, Administrator, SBA (Dec. 2, 1998) (SBA Dec. 2, 1998 Letter).

²⁸³ *Revision of Part 22 and Part 90 of the Commission's Rules to Facilitate Future Development of Paging Systems*, Memorandum Opinion and Order on Reconsideration and Third Report and Order, 14 FCC Rcd 10030, paras. 98-107 (1999).

²⁸⁴ *Id.* at 10085, para. 98.

²⁸⁵ "Trends in Telephone Service" at Table 5.3.

²⁸⁶ *Id.*

SBA Dec. 2, 1998 letter.

developed a small business size standard for “Cellular and Other Wireless Telecommunications” services.²⁸⁸ Under that SBA small business size standard, a business is small if it has 1,500 or fewer employees.²⁸⁹ According to Commission data, 445 carriers reported that they were engaged in the provision of wireless telephony.²⁹⁰ We have estimated that 245 of these are small under the SBA small business size standard.

115. *Broadband Personal Communications Service.* The broadband Personal Communications Service (PCS) spectrum is divided into six frequency blocks designated A through F, and the Commission has held auctions for each block. The Commission defined “small entity” for Blocks C and F as an entity that has average gross revenues of \$40 million or less in the three previous calendar years.²⁹¹ For Block F, an additional classification for “very small business” was added and is defined as an entity that, together with its affiliates, has average gross revenues of not more than \$15 million for the preceding three calendar years.²⁹² These standards defining “small entity” in the context of broadband PCS auctions have been approved by the SBA.²⁹³ No small businesses, within the SBA-approved small business size standards, bid successfully for licenses in Blocks A and B. There were 90 winning bidders that qualified as small entities in the Block C auctions. A total of 93 small and very small business bidders won approximately 40 percent of the 1,479 licenses for Blocks D, E, and F.²⁹⁴ On March 23, 1999, the Commission re-auctioned 347 C, D, E, and F Block licenses. There were 48 small business winning bidders. On January 26, 2001, the Commission completed the auction of 422 C and F Broadband PCS licenses in Auction No. 35. Of the 35 winning bidders in this auction, 29 qualified as “small” or “very small” businesses. Subsequent events, concerning Auction 35, including judicial and agency determinations, resulted in a total of 163 C and F Block licenses being available for grant.

116. *Narrowband Personal Communications Services.* To date, two auctions of narrowband personal communications services (PCS) licenses have been conducted. For purposes of the two auctions that have already been held, “small businesses” were entities with average gross revenues for the prior three calendar years of \$40 million or less. Through these auctions, the Commission has awarded a total of 41 licenses, out of which 11 were obtained by small businesses. To ensure meaningful participation of small business entities in future auctions, the Commission has adopted a two-tiered small business size standard in the *Narrowband PCS Second Report and Order*.²⁹⁵ A “small business” is an entity that, together with affiliates and controlling interests, has average gross revenues for the three preceding years of not more than \$40 million. A “very small business” is an entity that, together with affiliates and

²⁸⁸ 13 C.F.R. § 121.201, NAICS code 513322 (changed to 517212 in October 2002).

²⁸⁹ *Id.*

²⁹⁰ “Trends in Telephone Service” at Table 5.3.

²⁹¹ See *Amendment of Parts 20 and 24 of the Commission’s Rules – Broadband PCS Competitive Bidding and the Commercial Mobile Radio Service Spectrum Cap*, WT Docket No. 96-59, Report and Order, 11 FCC Rcd 7824, 61 FR 33859 (July 1, 1996) (*PCS Order*); see also 47 C.F.R. § 24.720(b).

²⁹² See *PCS Order*, 11 FCC Rcd 7824.

²⁹³ See, e.g., *Implementation of Section 309(j) of the Communications Act – Competitive Bidding*, PP Docket No. 93-253, Fifth Report and Order, 9 FCC Rcd 5332, 59 FR 37566 (July 22, 1994).

²⁹⁴ FCC News, *Broadband PCS, D, E and F Block Auction Closes*, No. 71744 (rel. Jan. 14, 1997); see also *Amendment of the Commission’s Rules Regarding Installment Payment Financing for Personal Communications Services (PCS) Licenses*, WT Docket No. 97-82, Second Report and Order, 12 FCC Rcd 16436, 62 FR 55348 (Oct. 24, 1997).

²⁹⁵ *Amendment of the Commission’s Rules to Establish New Personal Communications Services, Narrowband PCS*, Docket No. ET 92-100, Docket No. PP 93-253, Second Report and Order and Second Further Notice of Proposed Rulemaking, 15 FCC Rcd 10456, 65 FR 35875 (June 6, 2000).

controlling interests. **has** average gross revenues for the three preceding years of not more than \$15 million. The SBA has approved these small business size standards.''' In the future, the Commission will auction 459 licenses to serve Metropolitan Trading Areas (MTAs) and 408 response channel licenses. There is also one megahertz of narrowband PCS spectrum that has been held in reserve and that the Commission has not yet decided to release for licensing. The Commission cannot predict accurately the number of licenses that will be awarded to small entities in future auctions. However, four of the 16 winning bidders in the two previous narrowband PCS auctions were small businesses, **as** that term was defined. The Commission assumes, for purposes of this analysis **that** a large portion of the remaining narrowband PCS licenses will be awarded to small entities. The Commission also assumes that **at least** some small businesses will acquire narrowband PCS licenses by means of the Commission's partitioning and disaggregation rules.

117. **220 MHz Radio Service – Phase I Licensees.** The 220 MHz service has both Phase I and Phase II licenses. Phase I licensing was conducted by lotteries in 1992 and 1993. There are approximately 1,515 such non-nationwide licensees and four nationwide licensees currently authorized to operate in the 220 MHz band. The Commission has not developed a small business size standard for small entities specifically applicable to such incumbent 220 MHz Phase I licensees. To estimate the number of such licensees that are small businesses, we apply the small business size standard under the SBA rules applicable to "Cellular and Other Wireless Telecommunications" companies. This category provides that a small business is a wireless company employing no more than 1,500 persons.''' For the census category Cellular and Other Wireless Telecommunications, Census Bureau data for 1997 show that there were **977** firms in this category, total, that operated for the entire year.²⁹⁸ Of this total, **965** firms had employment of 999 or fewer employees, and an additional 12 firms had employment of 1,000 employees or more.²⁹⁹ Thus, under this second category and size standard, the majority of firms can, again, be considered small. Assuming this general ratio continues in the context of Phase I 220 MHz licensees, the Commission estimates that nearly all such licensees are small businesses under the SBA's small business size standard. In addition, limited preliminary census data for 2002 indicate that the **total** number of cellular and other wireless telecommunications carriers increased approximately 321 percent from **1997** to **2002**.³⁰⁰

118. **220 MHz Radio Service – Phase II Licensees.** The 220 MHz service has both Phase I and Phase II licenses. The Phase II 220 MHz service is a new service, and is subject to spectrum auctions. In the **220 MHz Third Report and Order**, we adopted a small business size standard for "small" and "very small" businesses for purposes of determining their eligibility for special provisions such as bidding credits and installment payments.''' This small business size standard indicates that a "small business" is an entity that, together with its affiliates and controlling principals, has average gross revenues not

²⁹⁶ See SBA Dec. 2, 1998 Letter.

²⁹⁷ 13 C.F.R. § 121.201, NAICS code 513322 (changed to 517212 in October 2002).

²⁹⁸ U.S. Census Bureau, 1997 Economic Census, Subject Series: "Information," Table 5, Employment Size of Firms Subject to Federal Income Tax: 1997, NAICS code 513322 (issued October 2000).

²⁹⁹ *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is "Firms with 1000 employees or more."

³⁰⁰ See U.S. Census Bureau, 2002 Economic Census, Industry Series: "Information," Table 2, Comparative Statistics for the United States (1997 NAICS Basis): 2002 and 1997, NAICS code 513322 (issued Nov. 2004). The preliminary data indicate that the total number of "establishments" increased from 2,959 to 9,511. In this context, the number of establishments is a less helpful indicator of small business prevalence than is the number of "firms," because the latter number takes into account the concept of common ownership or control. The more helpful 2002 census data on firms, including employment and receipts numbers, will be issued in late **2005**.

³⁰¹ **220 MHz Third Report and Order**, 12 FCC Red 10943, 11068-70, paras. 291-295 (1997).

exceeding \$15 million for the preceding three years.³⁰² A "very small business" is an entity that, together with its affiliates and controlling principals, has average gross revenues that do not exceed \$3 million for the preceding three years. The SBA has approved these small business size standards.³⁰³ Auctions of Phase II licenses commenced on September 15, 1998, and closed on October 22, 1998.³⁰⁴ In the first auction, 908 licenses were auctioned in three different-sized geographic areas: three nationwide licenses, 30 Regional Economic Area Group (EAG) Licenses, and 875 Economic Area (EA) licenses. Of the 908 licenses auctioned, 693 were sold.³⁰⁵ Thirty-nine small businesses won licenses in the first 220 MHz auction. The second auction included 225 licenses: 216 EA licenses and 9 EAG licenses. Fourteen companies claiming small business status won 158 licenses.³⁰⁶

119. *800 MHz and 900 MHz Specialized Mobile Radio Licenses.* The Commission awards "small entity" and "very small entity" bidding credits in auctions for Specialized Mobile Radio (SMR) geographic area licenses in the 800 MHz and 900 MHz bands to firms that had revenues of no more than \$15 million in each of the three previous calendar years, or that had revenues of no more than \$3 million in each of the previous calendar years, respectively.³⁰⁷ These bidding credits apply to SMR providers in the 800 MHz and 900 MHz bands that either hold geographic area licenses or have obtained extended implementation authorizations. The Commission does not know how many firms provide 800 MHz or 900 MHz geographic area SMR service pursuant to extended implementation authorizations, nor how many of these providers have annual revenues of no more than \$15 million. One firm has over \$15 million in revenues. The Commission assumes, for purposes here, that all of the remaining existing extended implementation authorizations are held by small entities as that term is defined by the SBA. The Commission has held auctions for geographic area licenses in the 800 MHz and 900 MHz SMR bands. There were 60 winning bidders that qualified as small or very small entities in the 900 MHz SMR auctions. Of the 1,020 licenses won in the 900 MHz auction, bidders qualifying as small or very small entities won 263 licenses. In the 800 MHz auction, 38 of the 524 licenses won were won by small and very small entities.

120. *700 MHz Guard Band Licensees.* In the 700 MHz Guard Band ~~01-del.~~, we adopted a small business size standard for "small businesses" and "very small businesses" for purposes of determining their eligibility for special provisions such as bidding credits and installment payments.³⁰⁸ A "small business" as an entity that, together with its affiliates and controlling principals, has average gross revenues not exceeding \$15 million for the preceding three years. Additionally, a "very small business" is an entity that, together with its affiliates and controlling principals, has average gross revenues that are not more than \$3 million for the preceding three years. An auction of 52 Major Economic Area (MEA) licenses commenced on September 6, 2000, and closed on September 21, 2000.³⁰⁹ Of the 104 licenses auctioned, 96 licenses were sold to nine bidders. Five of these bidders were small businesses that won a total of 26 licenses. A second auction of 700 MHz Guard Band licenses commenced on February 13,

³⁰² *Id.* at 11068, para. 291.

³⁰³ See Letter to D. Phythyon, Chief, Wireless Telecommunications Bureau, Federal Communications Commission, from A. Alvarez, Administrator, Small Business Administration (Jan. 6, 1998).

³⁰⁴ See generally Public Notice, "220 MHz Service Auction Closes," 14 FCC Rcd 605 (1998).

³⁰⁵ See, e.g., Public Notice, "FCC Announces It is Prepared to Grant 654 Phase II 220 MHz Licenses After Final Payment is Made," 14 FCC Rcd 1085 (1999).

³⁰⁶ Public Notice, "Phase II 220 MHz Service Spectrum Auction Closes," 14 FCC Rcd 11218 (1999).

³⁰⁷ 47 C.F.R. § 90.814(b)(1).

³⁰⁸ See *Service Rules for the 746-764 MHz Bands, and Revisions to part 27 of the Commission's Rules*, WT Docket No. 99-168, Second Report and Order, 15 FR 17599 (Apr. 4, 2000).

³⁰⁹ See generally Public Notice, "220 MHz Service Auction Closes," Report No. WT 98-36 (Oct. 23, 1998).

2001 and closed on February 21, 2001. All eight of the licenses auctioned were sold to three bidders. One of these bidders was a small business that won a total of two licenses.³¹⁰

121. Rural Radiotelephone Service. The Commission has not adopted a size standard for small businesses specific to the Rural Radiotelephone Service.” A significant subset of the Rural Radiotelephone Service is the Basic Exchange Telephone Radio System (BETRS).³¹² The Commission **uses** the SBA’s small business size standard applicable to “Cellular and Other Wireless Telecommunications,” *i.e.*, an entity employing no more than 1,500 persons.³¹³ There are approximately 1,000 licensers in the Rural Radiotelephone Service, and the Commission estimates that there are 1,000 or fewer small entity licensees in the Rural Radiotelephone Service that may be affected by the rules and policies adopted herein.

122. Air-Ground Radiotelephone Service. The Commission has **not** adopted a small business size standard specific to the Air-Ground Radiotelephone Service.³¹⁴ We will **use** SBA’s small business size standard applicable to “Cellular and Other Wireless Telecommunications,” *i.e.*, an entity employing no more than 1,500 persons.” There are approximately 100 licensees in the Air-Ground Radiotelephone Service, and we estimate that almost all of them qualify as small under the SBA small business size standard.

123. Aviation and Marine Radio Services. Small businesses in the aviation and marine radio services use a very high frequency (VHF) marine or aircraft radio and, as appropriate, an emergency position-indicating radio beacon (and/or radar) or an emergency locator transmitter. The Commission has **not** developed a small business size standard specifically applicable to these small businesses. For purposes of this analysis, the Commission uses the SBA small business size standard for the category “Cellular and Other Telecommunications,” which is 1,500 or fewer employees.” Most applicants for recreational licenses are individuals. Approximately 581,000 ship station licensees and 131,000 aircraft station licensees operate domestically and are not subject to the radio carriage requirements of any statute or treaty. For purposes of our evaluations in this analysis, we estimate that there are up to approximately 712,000 licensees that are small businesses (or individuals) under the **SBA** standard. In addition, between December 3, 1998 and December 14, 1998, the Commission held an auction of **42** VHF Public Coast licenses in the 157.1875-157.4500 MHz (ship transmit) and 161.775-162.0125 MHz (coast transmit) bands. For purposes of the auction, the Commission defined a “small” business as an entity that, together with controlling interests and affiliates, has average gross revenues for the preceding three years not to exceed \$15 million dollars. In addition, a “very small” business is one that, together with controlling interests and affiliates, has average gross revenues for the preceding three years not to exceed \$3 million dollars.” There are approximately 10,672 licensees in the Marine Coast Service, and the Commission estimates that almost **all** of them qualify as “small” businesses under the above special small business size standards.

³¹⁰ Public Notice, “700MHz Guard Band Auction Closes,” DA 01-478 (rel. Feb. 22, 2001)

³¹¹ The service is defined in section 22.99 of the Commission’s Rules, 47 C.F.R. § 22.99.

³¹² **BETRS** is defined in sections 22.757 and 22.759 of the Commission’s Rules, 47 C.F.R. §§ 22.757 and 22.759.

³¹³ 13 C.F.R. § 121.201, NAICS code 517212

³¹⁴ The service is defined in section 22.99 of the Commission’s Rules, 47 C.F.R. § 22.99.

³¹⁵ 13 C.F.R. § 121.201, NAICS codes 517212.

³¹⁶ 13 C.F.R. § 121.201, NAICS code 513322 (changed to 517212 in October 2002)

³¹⁷ *Amendment of the Commission’s Rules Concerning Maritime Communications*, PR Docket No. 92-257, Third Report and Order and Memorandum Opinion and Order, 13 FCC Rcd 19853 (1998)

124. *Offshore Radiotelephone Service.* This service operates on several UHF television broadcast channels that are not used for television broadcasting in the coastal areas of states bordering the Gulf of Mexico.³¹⁸ There are presently approximately 55 licensees in this service. We are unable to estimate at this time the number of licensees that would qualify as **small** under the SBA's small business size standard for "Cellular and Other Wireless Telecommunications" services."³¹⁹ Under that SBA small business size standard, a business is small if it has 1,500 or fewer employees."³²⁰

125. *39 GHz Service.* The Commission created a special small business size standard for 39 GHz licenses – an entity **that** has average gross revenues of \$40 million or less in the three previous calendar years."³²¹ An additional size standard for "very small business" is: an entity that, together with affiliates, has average gross revenues of not more than \$15 million for the preceding three calendar years.³²² The SBA has approved these small business size standards."³²³ The auction of the 2,173 39 GHz licenses began on April 12, 2000 and closed on May 8, 2000. The 18 bidders who claimed small business **status** won 849 licenses. Consequently, the Commission estimates that 15 or fewer 39 GHz licensees are small entities that may be affected by the rules and policies adopted herein.

126. *Multipoint Distribution Service, Multichannel Multipoint Distribution Service, and ITFS.* Multichannel Multipoint Distribution Service (MMDS) systems, often referred to as "wireless cable," transmit video programming to subscribers using the microwave frequencies of the Multipoint Distribution Service (MDS) and Instructional Television Fixed Service (ITFS).³²⁴ In connection with the 1996 MDS auction, the Commission established a small business size standard as an entity that had annual average gross revenues of less than \$40 million in the previous three calendar years."³²⁵ The MDS auctions resulted in 67 successful bidders obtaining licensing opportunities for 493 Basic Trading Areas (BTAs). Of the 67 auction winners, 61 met the definition of a **small** business. MDS also includes licensees of stations authorized prior to the auction. In addition, the SBA has developed a small business size standard for Cable and Other Program Distribution, which includes all such companies generating **\$12.5** million or less in annual receipts."³²⁶ According to Census Bureau data for 1997, there were a total of 1,311 firms in this category, total, **that** had operated for the entire year."³²⁷ Of this total, 1,180 firms had annual receipts of under \$10 million and an additional 52 firms had receipts of \$10 million or more but less than \$25 million. Consequently, we estimate that the majority of providers in this service category are small businesses that may be affected by the rules and policies adopted herein. This SBA small business size standard also appears applicable to ITFS. There are presently 2,032 ITFS licensees. **All** but

³¹⁸ This service is governed by Subpart I of Part 22 of the Commission's rules. See 47 C.F.R. §§ 22.1001-22.1037.

³¹⁹ 13 C.F.R. § 121.201, NAICS code 513322 (changed to 517212 in October 2002)

³²⁰ *Id.*

³²¹ See *Amendment of the Commission's Rules Regarding the 37.0-38.6 GHz and 38.6-40.0 GHz Bands*, ET Docket No. 95-183, Report and Order, 63 Fed. Reg. 6079 (Feb. 6, 1998).

³²² *Id.*

³²³ See Letter to Kathleen O'Brien Ham, Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, FCC, from Aida Alvarez, Administrator, SBA (Feb. 4, 1998).

³²⁴ *Amendment of Parts 21 and 74 of the Commission's Rules with Regard to Filing Procedures in the Multipoint Distribution Service and in the Instructional Television Fixed Service and Implementation of Section 309(j) of the Communications Act – Competitive Bidding*, MM Docket No. 94-131 and PP Docket No. 93-253, Report and Order, 10 FCC Rcd 9589, 9593, para. 7 (1995).

³²⁵ 47 C.F.R. § 21.961(b)(1).

³²⁶ 13 C.F.R. § 121.201, NAICS code 513220 (changed to 517510 in October 2002)

³²⁷ U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)", Table 4, NAICS code 513220 (issued October 2000)

100 of these licenses are held by educational institutions. Educational institutions are included in this analysis as small entities.³²⁸ Thus, we tentatively conclude that at **least 1,932** licensees are small businesses.

127. **Local Multipoint Distribution Service.** Local Multipoint Distribution Service (LMDS) is a fixed broadband **point-to-multipoint** microwave service that **provides** for two-way **video telecommunications**.³²⁹ The auction of the 1,030 Local Multipoint Distribution Service (LMDS) licenses began on February 18, 1998 and closed on March 25, 1998. The Commission established a small business size standard for LMDS licenses as an entity that has average gross revenues of less than \$40 million in the three previous calendar years.³³⁰ An additional small business size standard for "very small business" was added as an entity that, together with its affiliates, has average gross revenues of not more than \$15 million for the preceding three calendar years.³³¹ The SBA has approved these small business size standards in the context of LMDS auctions.³³² There were **93** winning bidders that qualified as small entities in the LMDS auctions. **A** total of 93 small and very small business bidders won approximately **277 A Block** licenses and **387 B Block** licenses. **On March 27, 1999**, the Commission re-auctioned 161 licenses; there were 40 winning bidders. Based on this information, we conclude that the number of small LMDS licenses consists of the 93 winning bidders in the first auction and the 40 winning bidders in the re-auction, for a total of 133 small entity LMDS providers.

128. **218-219 MHz Service.** The first auction of **218-219 MHz** spectrum resulted in 170 entities winning licenses for 594 Metropolitan Statistical Area (MSA) licenses. Of the **594** licenses, **557** were won by entities qualifying as a small business. For that auction, the small business size standard was an entity that, together with its affiliates, has no more than a \$6 million net worth and, after federal income taxes (excluding any carry over losses), has no more than \$2 million in annual profits each year for the previous two years.³³³ In the **218-219 MHz Report and Order and Memorandum Opinion and Order**, we established a small business size standard for a "small business" as an entity that, together with its affiliates and persons or entities that hold interests in such an entity and their affiliates, has average annual gross revenues not to exceed \$15 million for the preceding three years.³³⁴ A "very small business" is defined as an entity that, together with its affiliates and persons or entities that hold interests in such an entity and its affiliates, has average annual gross revenues not to exceed \$3 million for the preceding three years.³³⁵ We cannot estimate, however, the number of licenses that will be won by entities qualifying as small or very small businesses under our rules in **future** auctions of **218-219 MHz** spectrum.

³²⁸ In addition, the term "small entity" within SBREFA applies to small organizations (nonprofits) and to small governmental jurisdictions (cities, counties, towns, townships, villages, school districts, and special districts with populations of less than 50,000). 5 U.S.C. §§ 601(4)-(6). We do not collect annual revenue data on ITFS licensees.

³²⁹ See *Local Multipoint Distribution Service*, Second Report and Order, 12 FCC Rcd 12545 (1997).

³³⁰ *Id.*

³³¹ See *id.*

³³² See Letter to Dan Phythyon, Chief, Wireless Telecommunications Bureau, FCC, from Aida Alvarez, Administrator, SBA (Jan. 6, 1998).

³³³ *Implementation of Section 309(j) of the Communications Act – Competitive Bidding*, PP Docket No. 93-253, Fourth Report and Order, 59 Fed. Reg. 24947 (May 13, 1994).

³³⁴ *Amendment of Part 95 of the Commission's Rules to Provide Regulatory Flexibility in the 218-219 MHz Service*, WT Docket No. 98-169, Report and Order and Memorandum Opinion and Order, 64 Fed. Reg. 59656 (Nov. 3, 1999).

³³⁵ *Amendment of Part 95 of the Commission's Rules to Provide Regulatory Flexibility in the 218-219 MHz Service*, WT Docket No. 98-169, Report and Order and Memorandum Opinion and Order, 64 Fed. Reg. 59656 (Nov. 3, 1999).

129. **24 GHz – Incumbent Licensees.** This analysis may affect incumbent licensees who were relocated to the 24 GHz band from the 18 GHz band, and applicants who wish to provide services in the 24 GHz band. The applicable SBA small business size standard is that of "Cellular and Other Wireless Telecommunications" companies. This category provides that such a company is small if it employs no more than 1,500 persons.³³⁷ According to Census Bureau data for 1997, there were 977 firms in this category, total, that operated for the entire year.³³⁷ Of this total, 965 firms had employment of 999 or fewer employees, and an additional 12 firms had employment of 1,000 employees or more.³³⁸ Thus, under this size standard, the great majority of firms can be considered small. These broader census data notwithstanding, we believe that there are only two licensees in the 24 GHz band that were relocated from the 18 GHz band, Teligent³³⁹ and TRW, Inc. It is our understanding that Teligent and its related companies have less than 1,500 employees, though this may change in the future. TRW is not a small entity. Thus, only one incumbent licensee in the 24 GHz band is a small business entity.

130. **24 GHz – Future Licensees.** With respect to new applicants in the 24 GHz band, the small business size standard for "small business" is an entity that, together with controlling interests and affiliates, has average annual gross revenues for the three preceding years not in excess of \$15 million.³⁴⁰ "Very small business" in the 24 GHz band is an entity that, together with controlling interests and affiliates, has average gross revenues not exceeding \$3 million for the preceding three years.³⁴¹ The SBA has approved these small business size standards.³⁴² These size standards will apply to the future auction, if held.

2 Cable and OVS Operators

131. **Cable and Other Program Distribution.** This category includes cable systems operators, closed circuit television services, direct broadcast satellite services, multipoint distribution systems, satellite master antenna systems, and subscription television services. The SBA has developed small business size standard for this census category, which includes all such companies generating \$12.5 million or less in revenue annually.³⁴³ According to Census Bureau data for 2002, there were a total of 1,191 firms in this category that operated for the entire year.³⁴⁴ Of this total, 1,087 firms had annual receipts of under \$10 million, and 43 firms had receipts of \$10 million or more but less than \$25

³³⁶ 13 C.F.R. § 121.201, NAICS code 513322 (changed to 517212 in October 2002).

³³⁷ U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Employment Size of Firms Subject to Federal Income Tax: 1997," Table 5, NAICS code 513322 (issued Oct. 2000).

³³⁸ *Id.* The census data do not provide a more precise estimate of the number of firms that have employment of 1,500 or fewer employees; the largest category provided is "Firms with 1,000 employees or more."

³³⁹ Teligent acquired the DEMS licenses of FirstMark, the only licensee other than TRW in the 24 GHz band whose license has been modified to require relocation to the 24 GHz band.

³⁴⁰ *Amendments to Parts 1.2, 87 and 101 of the Commission's Rules to License Fixed Services at 24 GHz*, Report and Order, 15 FCC Rcd 16934, 16967 (2000); see also 47 C.F.R. § 101.538(a)(2).

³⁴¹ *Amendments to Parts 1.2, 87 and 101 of the Commission's Rules to License Fixed Services at 24 GHz*, Report and Order, 15 FCC Rcd 16934, 16967 (2000); see also 47 C.F.R. § 101.538(a)(1).

³⁴² See Letter to Margaret W. Wiener, Deputy Chief, Auctions and Industry Analysis Division, Wireless Telecommunications Bureau, FCC, from Gary M. Jackson, Assistant Administrator, SBA (July 28, 2000).

³⁴³ 13 C.F.R. § 121.201, North American Industry Classification System (NAICS) code 513220 (changed to 517510 in October 2002).

³⁴⁴ U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, Table 4, Receipts Size of Firms for the United States: 2002, NAICS code 517510 (issued November 2005).

million.³⁴⁵ Consequently, the Commission estimates that the majority of providers in this service category are small businesses that may be affected by the rules and policies adopted herein.

132. *Cable System Operators.* The Commission has developed its own small business size standards for cable system operators, for purposes of rare regulation. Under the Commission's rules, a "small cable company" is one serving fewer than 400,000 subscribers nationwide.³⁴⁶ In addition, a "small system" is a system serving 15,000 or fewer subscribers.³⁴⁷

133. *Cable System Operators (Telecom Act Standard).* The Communications Act of 1934, as amended, also contains a size standard for small cable system operators, which is "a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1 percent of all subscribers in the United States and is **not** affiliated with any entity or entities whose gross annual revenues in the aggregate exceed \$250,000,000."³⁴⁸ The Commission has determined that there are approximately 67,700,000 subscribers in the United States.³⁴⁹ Therefore, an operator serving fewer than 677,000 subscribers shall be deemed a small operator, if its annual revenues, when combined with the total annual revenues of all its affiliates, do not exceed \$250 million in the aggregate.³⁵⁰ Based on available data, the Commission estimates that the number of cable operators serving 677,000 subscribers or fewer, totals 1,450. The Commission neither requests nor collects information on whether cable system operators are affiliated with entities whose gross annual revenues exceed \$250 million,³⁵¹ and therefore is unable, at this time, to estimate more accurately the number of cable system operators that **would** qualify as small cable operators under the size standard contained in the Communications Act of 1934.

134. *Open Video Services.* Open Video Service (OVS) systems provide subscription services.³⁵² The SBA has created a small business size standard for Cable and Other Program Distribution.³⁵³ This standard provides that a **small** entity is one with \$12.5 million or less in annual receipts. The Commission has certified approximately 25 OVS operators to serve 75 areas, and some of these are currently providing service.³⁵⁴ Affiliates of Residential Communications Network, Inc. (RCN) received approval to operate OVS systems in New York City, Boston, Washington, D.C., and other areas. RCN has sufficient revenues to **assure** that they do not qualify as a small business entity. Little financial information is available for the other entities that are authorized to provide OVS and are **not** yet operational. Given that some entities authorized to provide OVS service have **not** yet begun to generate

³⁴⁵ *Id.* An additional 61 firms had annual receipts of \$25 million or more.

³⁴⁶ 47 C.F.R. § 76.901(e). The Commission determined that this size standard equates approximately to a size standard of \$100 million or less in annual revenues. *Implementation of Sections of the 1992 Cable Act: Rare Regulation*, Sixth Report and Order and Eleventh Order on Reconsideration, 10 FCC Rcd 7393, 7408 (1995).

³⁴⁷ 47 C.F.R. § 76.901(c)

³⁴⁸ 47 U.S.C. § 543(m)(2); see 47 C.F.R. § 76.901(f) & nn. 1-3

³⁴⁹ See Public Notice, *FCC Announces New Subscriber Count for the Definition of Small Cable Operator*, DA 01-158 (Cable Services Bureau, Jan. 24, 2001).

³⁵⁰ 47 C.F.R. § 76.901(f)

³⁵¹ The Commission does receive such information on a case-by-case basis if a cable operator appeals a local franchise authority's finding that the operator does not qualify as a small cable operator pursuant to § 76.901(f) of the Commission's rules. See 47 C.F.R. § 76.909(b).

³⁵² See 47 U.S.C. § 573.

³⁵³ 13 C.F.R. § 121.201, NAICS code 513220 (changed to 517510 in October 2002).

³⁵⁴ See <<http://www.fcc.gov/esb/ovs/esovscet.html>> (current as of March 2002).

revenues, the Commission concludes that up to 24 OVS operators (those remaining) might qualify as small businesses that may be affected by the rules and policies adopted herein.

3. Internet Service Providers

135. *Internet Service Providers.* The SBA has developed a small business size standard for Internet Service Providers (ISPs). ISPs "provide clients access to the Internet and generally provide related services such as web hosting, web page designing, and hardware or software consulting related to Internet connectivity."³⁵⁵ Under the SBA size standard, such a business is small if it has average annual receipts of \$21 million or less.³⁵⁶ According to Census Bureau data for 2002, there were 2,529 firms in this category that operated for the entire year.³⁵⁷ Of these, 2,437 firms had annual receipts of under \$10 million, and 47 firms had receipts of \$10 million or more but less than \$25 million.³⁵⁸ Consequently, we estimate that the majority of these firms are small entities that may be affected by our action.

4. Other Internet-Related Entities

136. *Web Search Portals.* Our action pertains to interconnected VoIP services, which could be provided by entities that provide other services such as email, online gaming, web browsing, video conferencing, instant messaging, and other, similar IP-enabled services. The Commission has not adopted a size standard for entities that create or provide these types of services or applications. However, the census bureau has identified firms that "operate web sites that use a search engine to generate and maintain extensive databases of Internet addresses and content in an easily searchable format. Web search portals often provide additional Internet services, such as e-mail, connections to other web sites, auctions, news, and other limited content, and serve as a home base for Internet users."³⁵⁹ The SBA has developed a small business size standard for this category; that size standard is \$6 million or less in average annual receipts.³⁶⁰ According to Census Bureau data for 1997, there were 195 firms in this category that operated for the entire year.³⁶¹ Of these, 172 had annual receipts of under \$5 million, and an additional nine firms had receipts of between \$5 million and \$9,999,999. Consequently, we estimate that the majority of these firms are small entities that may be affected by our action.

137. *Data Processing, Hosting, and Related Services.* Entities in this category "primarily ... provid[e] infrastructure for hosting or data processing services."³⁶² The SBA has developed a small business size standard for this category; that size standard is \$21 million or less in average annual

³⁵⁵ U.S. Census Bureau, "2002 NAICS Definitions: 518111 Internet Service Providers" (Feb. 2004) <www.census.gov>.

³⁵⁶ 13 C.F.R. § 121.201, NAICS code 518111 (changed from previous code 514191, "On-Line Information Services," in Oct. 2002).

³⁵⁷ U.S. Census Bureau, 2002 Economic Census, Subject Series: Information, Table 4, Receipts Size of Firms for the United States: 2002, NAICS code 518111 (issued November 2005).

³⁵⁸ *Id.* An additional 45 firms had annual receipts of \$25 million or more.

³⁵⁹ U.S. Census Bureau, "2002 NAICS Definitions: 518112 Web Search Portals" (Feb. 2004) <www.census.gov>.

³⁶⁰ 13 C.F.R. § 121.201, NAICS code 518112 (changed from 514199 in Oct. 2002).

³⁶¹ U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 514199 (issued Oct. 2000). This category was created for the 2002 Economic Census by taking a portion of the superseded 1997 category, "All Other Information Services," NAICS code 514199. The data cited in the text above are derived from the superseded category.

³⁶² U.S. Census Bureau, "2002 NAICS Definitions: 518110 Data Processing, Hosting, and Related Services" (Feb. 2004) <www.census.gov>.

receipts.³⁶³ According to Census Bureau data for 1997, there were 3,700 fit-ms in this category that operated for the entire year.³⁶⁴ Of these, 3,477 had annual receipts of under \$10 million, and an additional 108 firms had receipts of between \$10 million and \$24,999,999. Consequently, we estimate that the majority of these firms are small entities that may be affected by our action.

138. *All Other Information Services.* "This industry comprises establishments primarily engaged in providing other information services (except new syndicates and libraries and at-chives)."" Our action pertains to interconnected VoIP services, which could be provided by entities that provide other services such as email, online gaming, web browsing, video conferencing, instant messaging, and other, similar IP-enabled services. The SBA has developed a small business size standard for this category: that size standard is \$6 million or less in average annual receipts.³⁶⁵ According to Census Bureau data for 1997, there were 195 fit-ms in this category that operated for the entire year.³⁶⁷ Of these, 172 had annual receipts of under \$5 million, and an additional nine firms had receipts of between \$5 million and \$9,999,999. Consequently, we estimate that the majority of these firms are small entities that may be affected by our action.

139. *Internet Publishing and Broadcasting.* "This industry comprises establishments engaged in publishing and/or broadcasting content on the Internet exclusively. These establishments do not provide traditional (non-Internet) versions of the content that they publish or broadcast.""³⁶⁸ The SBA has developed a small business size standard for this new (2002)census category: that size standard is 500 or fewer employees."" To assess the prevalence of small entities in this category, we will use 1997 Census Bureau data for a relevant, now-superseded census category, "All Other Information Services." The SBA small business size standard for that prior category was \$6 million or less in average annual receipts. According to Census Bureau data for 1997, there were 195 firms in the prior category that operated for the entire year.³⁷⁰ Of these, 172 had annual receipts of under \$5 million, and an additional nine firms had receipts of between \$5 million and \$9,999,999. Consequently, we estimate that the majority of the firms in this current category are small entities that may be affected by our action.

140. *Software Publishers.* These companies may design, develop or publish software and may provide other support services to software purchasers, such as providing documentation or assisting in installation. The companies may also design software to meet the needs of specific users. The SBA has developed a small business size standard of \$21 million or less in average annual receipts for all of the

³⁶³ 13 C.F.R. § 121.201, NAICS code 518210 (changed from 514210 in Oct. 2002).

³⁶⁴ U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 514210 (issued Oct. 2000).

³⁶⁵ U.S. Census Bureau, "2002 NAICS Definitions: 519190 All Other Information Services" (Feb. 2004) <www.census.gov>.

³⁶⁶ 13 C.F.R. § 121.201, NAICS code 519190 (changed from 514199 in Oct. 2002)

³⁶⁷ U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 514199 (issued Oct. 2000). This category was created for the 2002 Economic Census by taking a portion of the superseded 1997 category, "All Other Information Services," NAICS code 514199. The data cited in the text above are derived from the superseded category.

³⁶⁸ U.S. Census Bureau, "2002 NAICS Definitions: 516110 Internet Publishing and Broadcasting" (Feb. 2004) <www.census.gov>.

³⁶⁹ 13 C.F.R. § 121.201, NAICS code 516110 (derived from 514199 and other 1997 codes).

³⁷⁰ U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 514199 (issued Oct. 2000). This category was created for the 2002 Economic Census by taking portions of numerous 1997 categories

following pertinent categories: Software Publishers, Custom Computer Programming Services, and Other Computer Related Services.³⁷¹ For Software Publishers, Census Bureau data for 1997 indicate that there were 8,188 firms in the category that operated for the entire year.³⁷² Of these, 7,633 had **annual** receipts under \$10 million, and an additional 289 firms had receipts of between \$10 million and \$24,999,999. For providers of Custom Computer Programming Services, the Census Bureau data indicate that there were 19,334 firms that operated for the entire year.³⁷³ Of these, 18,786 had annual receipts of under \$10 million, and an additional 352 firms had receipts of between \$10 million and \$24,999,999. For providers of Other Computer Related Services, the Census Bureau data indicate that there were 5,524 firms that operated for the entire year.³⁷⁴ Of these, 5,484 had annual receipts of under \$10 million, and an additional 28 firms had receipts of between \$10 million and \$24,999,999. Consequently, we estimate that **the** majority of the firms in each of these three categories are small entities that may be affected by our action.

5. Equipment Manufacturers

141. The equipment manufacturers described in this section are merely indirectly affected by our current action, and therefore are not formally a part of this **RFA analysis**. We have included them, however, to broaden **the** record in this proceeding and to alert them to our decisions.

142. *Wireless Communications Equipment Manufacturers.* The SBA has established a small business size standard for Radio and Television Broadcasting and Wireless Communications Equipment Manufacturing. Examples of products in this category include "transmitting and receiving antennas, cable television equipment, **GPS** equipment, pagers, cellular phones, mobile communications equipment, and radio and television studio and broadcasting equipment" and may include other devices that transmit and receive IP-enabled services, such as personal digital assistants (PDAs). Under the SBA size standard, firms are considered small if they have 750 or fewer employees.³⁷⁵ According to Census Bureau data for 1997, there were 1,215 establishments³⁷⁶ in this category that operated for the entire year.³⁷⁷ Of those, there were 1,150 that had employment of under 500, and an additional 37 that had employment of 500 to 999. The percentage of wireless equipment manufacturers in this category was

³⁷¹ 13 C.F.R. § 121.201, NAICS codes 511210, 541511, and 541519.

³⁷² U.S. Census Bureau, 1997 Economic Census, Subject Series: Information, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4, NAICS code 511210 (issued Oct. 2000).

³⁷³ U.S. Census Bureau, 1997 Economic Census, Subject Series: Professional, Scientific, and Technical Services, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4a, NAICS code 541511 (issued Oct. 2000).

³⁷⁴ U.S. Census Bureau, 1997 Economic Census, Subject Series: Professional, Scientific, and Technical Services, "Establishment and Firm Size (Including Legal Form of Organization)," Table 4a, NAICS code 541519 (issued Oct. 2000).

³⁷⁵ Office of Management and Budget, North American Industry Classification System 308-09 (1997) (NAICS code 334220).

³⁷⁶ 13 C.F.R. § 121.201, NAICS code 334220.

³⁷⁷ The number of "establishments" is a less helpful indicator of small business prevalence in this context than would be the number of "firms" or "companies," because the latter take into account the concept of common ownership or control. Any single physical location (or an entity) is an establishment, even though that location may be owned by a different establishment. Thus, the numbers given may reflect inflated numbers of businesses in this category, including the numbers of small businesses. In this category, the Census breaks-out data for firms or companies only to give the total number of such entities for 1997, which were 1,089.

³⁷⁸ U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Industry Statistics by Employment Size," Table 1, NAICS code 334220 (issued Aug. 1999).

approximately 61.35%.³⁷⁹ so we estimate that the number of wireless equipment manufacturers with employment of under 500 **was** actually closer **to** 706, with an additional 23 establishments having employment of between 500 and 999. Consequently, we estimate that the majority of wireless communications equipment manufacturers are small entities **that** may be affected **by** our action.

143. *Telephone Apparatus Manufacturing.* This category “comprises establishments primarily engaged primarily in manufacturing wire telephone and data communications **equipment**.”³⁸⁰ Examples of pertinent products are “central office switching equipment, cordless telephones (except cellular), PBX equipment, telephones, telephone answering machines, and data communications equipment, such **as** bridges, routers, and gateways.”³⁸¹ The SBA has developed a small business size standard for this category of manufacturing: that size standard is 1,000 or fewer **employees**.³⁸² According **to** Census Bureau data for 1997, there were 598 establishments in this category that operated for the entire year.³⁸³ Of these, 574 had employment of under 1,000, and **an** additional 17 establishments had employment of 1,000 to 2,499. Consequently, we estimate that the majority of these establishments are small entities that may be affected by our action.

144. *Electronic Computer Manufacturing.* This category “comprises establishments primarily engaged in manufacturing and/or assembling electronic computers, such as mainframes, personal computers, workstations, laptops, and computer **servers**.”³⁸⁴ The SBA has developed a small business size standard for this category of manufacturing: that size standard is 1,000 or fewer **employees**.³⁸⁵ According **to** Census Bureau data for 1997, there were 563 establishments in this category that operated for the entire year.” Of these, 544 had employment of under 1,000, and **an** additional **11** establishments had employment of 1,000 to 2,499. Consequently, we estimate that the majority of these establishments are small entities that may be affected by our action.

145. *Computer Terminal Manufacturing.* “Computer terminals are input/output devices that connect with a central computer for **processing**.”³⁸⁷ The SBA has developed a small business size standard for this category of manufacturing: that size standard is 1,000 or fewer **employees**.³⁸⁸ According to Census Bureau data for 1997, there were 142 establishments in this category that operated for the entire

³⁷⁹ *Id.* at Table 5.

³⁸⁰ Office of Management and Budget, North American Industry Classification System 308 (1997) (NAICS code 334210).

³⁸¹ *Id.*

³⁸² 13 C.F.R. § 121.201, NAICS code 334210.

³⁸³ U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, “Telephone Apparatus Manufacturing,” Table 4, NAICS code 334210 (issued Sept. 1999).

³⁸⁴ Office of Management and Budget, North American Industry Classification System 306 (1997) (NAICS code 334111).

³⁸⁵ 13 C.F.R. § 121.201, NAICS code 334111.

³⁸⁶ U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, “Electronic Computer Manufacturing,” Table 4, NAICS code 334111 (issued Aug. 1999).

³⁸⁷ Office of Management and Budget, North American Industry Classification System 307 (1997) (NAICS code 334113).

³⁸⁸ 13 C.F.R. § 121.201, NAICS code 334113.

year, and all of the establishments had employment of under 1,000.³⁸⁹ Consequently, we estimate that the majority or all of these establishments are small entities that may be affected by our action.

146. *Other Computer Peripheral Equipment Manufacturing.* Examples of peripheral equipment in this category include keyboards, mouse devices, monitors, and scanners.³⁹⁰ The SBA has developed a small business size standard for this category of manufacturing; that size standard is 1,000 or fewer employees.³⁹¹ According to Census Bureau data for 1997, there were 1061 establishments in this category that operated for the entire year.³⁹² Of these, 1,046 had employment of under 1,000, and an additional six establishments had employment of 1,000 to 2,499. Consequently, we estimate that the majority of these establishments are small entities that may be affected by our action.

147. *Fiber Optic Cable Manufacturing.* These establishments manufacture "insulated fiber-optic cable from purchased fiber-optic strand."³⁹³ The SBA has developed a small business size standard for this category of manufacturing; that size standard is 1,000 or fewer employees.³⁹⁴ According to Census Bureau data for 1997, there were 38 establishments in this category that operated for the entire year.³⁹⁵ Of these, 37 had employment of under 1,000, and one establishment had employment of 1,000 to 2,499. Consequently, we estimate that the majority of these establishments are small entities that may be affected by our action.

148. *Other Communication and Energy Wire Manufacturing.* These establishments manufacture "insulated wire and cable of nonferrous metals from purchased wire."³⁹⁶ The SBA has developed a small business size standard for this category of manufacturing; that size standard is 1,000 or fewer employees.³⁹⁷ According to Census Bureau data for 1997, there were 275 establishments in this category that operated for the entire year.³⁹⁸ Of these, 271 had employment of under 1,000, and four establishments had employment of 1,000 to 2,499. Consequently, we estimate that the majority or all of these establishments are small entities that may be affected by our action.

149. *Audio and Video Equipment Manufacturing.* These establishments manufacture "electronic audio and video equipment for home entertainment, motor vehicle, public address and musical

³⁸⁹ U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Computer Terminal Manufacturing," Table 4, NAICS code 334113 (issued Aug. 1999).

³⁹⁰ Office of Management and Budget, North American Industry Classification System 307-08 (1997) (NAICS code 334119).

³⁹¹ 13 C.F.R. § 121.201, NAICS code 334119.

³⁹² U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Other Computer Peripheral Equipment Manufacturing," Table 4, NAICS code 334119 (issued Aug. 1999).

³⁹³ Office of Management and Budget, North American Industry Classification System 330 (1997) (NAICS code 335921).

³⁹⁴ 13 C.F.R. § 121.201, NAICS code 335921.

³⁹⁵ U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Fiber Optic Cable Manufacturing," Table 4, NAICS code 335921 (issued Nov. 1999).

³⁹⁶ Office of Management and Budget, North American Industry Classification System 331 (1997) (NAICS code 335929).

³⁹⁷ 13 C.F.R. § 121.201, NAICS code 335929.

³⁹⁸ U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Other Communication and Energy Wire Manufacturing," Table 4, NAICS code 335929 (issued Nov. 1999).

instrument amplifications.³⁹⁹ The SBA has developed a small business size standard for this category of manufacturing: that size standard is 750 or fewer employees.⁴⁰⁰ According to Census Bureau data for 1997, there were 554 establishments in this category that operated for the entire year.⁴⁰¹ Of these, 542 had employment of under 500, and nine establishments had employment of 500 to 999. Consequently, we estimate that the majority of these establishments are small entities that may be affected by our action.

150. *Electron Tube Manufacturing.* These establishments are "primarily engaged in manufacturing electron tubes and pans (except glass blanks)."⁴⁰² The SBA has developed a small business size standard for this category of manufacturing: that size standard is 750 or fewer employees.⁴⁰³ According to Census Bureau data for 1997, there were 158 establishments in this category that operated for the entire year.⁴⁰⁴ Of these, 148 had employment of under 500, and three establishments had employment of 500 to 999. Consequently, we estimate that the majority of these establishments are small entities that may be affected by our action.

151. *Bare Printed Circuit Board Manufacturing.* These establishments are "primarily engaged in manufacturing here (i.e., rigid or flexible) printed circuit boards without mounted electronic components."⁴⁰⁵ The SBA has developed a small business size standard for this category of manufacturing: that size standard is 500 or fewer employees.⁴⁰⁶ According to Census Bureau data for 1997, there were 1,389 establishments in this category that operated for the entire year.⁴⁰⁷ Of these, 1,369 had employment of under 500, and 16 establishments had employment of 500 to 999. Consequently, we estimate that the majority of these establishments are small entities that may be affected by our action.

152. *Semiconductor and Related Device Manufacturing.* These establishments manufacture "computer storage devices that allow the storage and retrieval of data from a phase change, magnetic, optical, or magnetic/optical media."⁴⁰⁸ The SBA has developed a small business size standard for this category of manufacturing: that size standard is 500 or fewer employees.⁴⁰⁹ According to Census Bureau

³⁹⁹ U.S. Census Bureau, "2002 NAICS Definitions: 334310 Audio and Video Equipment Manufacturing" (Feb. 2004) <www.census.gov>.

⁴⁰⁰ 13 C.F.R. § 121.201, NAICS code 334310.

⁴⁰¹ U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Audio and Video Equipment Manufacturing," Table 4, NAICS code 334310 (issued Aug. 1999).

⁴⁰² U.S. Census Bureau, "2002 NAICS Definitions: 334411 Electron Tube Manufacturing" (Feb. 2004) <www.census.gov>.

⁴⁰³ 13 C.F.R. § 121.201, NAICS code 334411.

⁴⁰⁴ U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Electron Tube Manufacturing," Table 4, NAICS code 334411 (issued July 1999).

⁴⁰⁵ U.S. Census Bureau, "2002 NAICS Definitions: 334412 Bare Printed Circuit Board Manufacturing" (Feb. 2004) <www.census.gov>.

⁴⁰⁶ 13 C.F.R. § 121.201, NAICS code 334412.

⁴⁰⁷ U.S. Census Bureau, 1997 Economic Census, Industry Series: Manufacturing, "Bare Printed Circuit Board Manufacturing," Table 4, NAICS code 334412 (issued Aug. 1999).

⁴⁰⁸ U.S. Census Bureau, "2001 NAICS Definitions: 334413 Semiconductor and Related Device Manufacturing" (Feb. 2004) <www.census.gov>.

⁴⁰⁹ 13 C.F.R. § 121.201, NAICS code 334413.